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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,709	06/12/2001	Wade Summers	SUM.101	3775
24062	7590	07/30/2004	EXAMINER	
CAMORIANO & ASSOCIATES 8225 SHELBYVILLE ROAD LOUISVILLE, KY 40222			FISCHER, JUSTIN R	
			ART UNIT	PAPER NUMBER

1733

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/879,709

Applicant(s)

SUMMERS, WADE

Examiner

Justin R Fischer

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15 and 18-21 is/are allowed.
- 6) ☒ Claim(s) 1-11, 13, 14, 16, 17 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-11, 13, 14, 16, 17, and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claims 1-8, 17, and 22, the original disclosure fails to provide support to exclude the inclusion of a component that is more rigid than the balls- in fact, the original disclosure, as best depicted in Figure 7, does disclose an assembly having a rim lock disposed within the tire assembly. In this instance, there is no description regarding the rigidity of the rim lock as compared to the same of the inflated balls (one would expect the rim lock to actually be more rigid, which contradicts claim limitation-). Furthermore, this limitation suggests that additional components having a lower rigidity can extend radially to span the space between the tire and the rim- such an arrangement was not described by the original disclosure. If applicant intends to describe the invention depicted in Figure 6, it is suggested that the plurality of balls are positively described as the only element disposed within the space between the tire and the rim- this is in contrast to describing elements that are not disposed within the space

between the tire and the rim (a fair reading of the original disclosure suggests that applicant envisioned the balls as being the only element within the space- Figure 6).

Regarding claims 1-8, 17, and 22, it is agreed that the language pertaining to the circumferential movement of the balls (general description) is supported by the original disclosure. However, the suggestion that "at least some of said balls" have such a characteristic constitutes new matter. In particular, this language suggests that the original disclosure envisioned embodiments in which not all of the balls were circumferential moveable- this is not the case. In the remarks section of the response dated May 25, 2004, applicant even stated that the embodiment in which all the balls are free to shift is depicted in all the figures and described throughout the application. Furthermore, applicant states (in the remarks section) that an embodiment in which the movement of some balls is restricted is conceivable- it is clear that such an embodiment was not envisioned at the time of the invention in light of the original disclosure.

With respect to claim 6, the language "repeating pattern" is seen to constitute new matter. As stated by applicant, the original disclosure states, "the balls could be inflated to different pressures, for example, alternating from a higher pressure in one ball to a lower pressure in the next adjacent ball". It is evident that this language describes a single specie and nowhere does the original disclosure provide support for the broader concept of a "repeating pattern". The broader concept that was positively described in the original disclosure involved the inflation of balls to different pressures.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 6, 12, 17, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krum (US 952,675, of record) and further in view of Mitchell (US 4,305,622, of record) and Ross (US 4,281,700, of record). It is initially noted that this rejection is being provided in light of the 112,1<sup>st</sup> paragraph rejections set forth above.

Krum is directed to a tire assembly comprising a tire and a rim, wherein a plurality of inflated balls are disposed within the hollow space defined by said tire and rim, such that the diameter of each of said balls spans the hollow space. While the references fail to expressly define the rim as a "safety rim" (one piece rim with internal recesses that receive the edge of the tire), one of ordinary skill in the art at the time of the invention would have found it obvious to form the rim of the previously noted tire assemblies as a "safety rim" since such a construction has been extensively used over approximately the last 40 years and represents a safe and economical alternative to previous multi-piece tire constructions. Mitchell (Column 3, Lines 10-16) and Ross (Column 1, Lines 52-53) evidence the well-known and conventional use of "safety rims" in the manufacture of current vehicle tires. It is further noted that the tire assembly of Krum is not limited to the multi-part rim constructions depicted in the respective figures; in fact, Krum states that the rim "may be of any kind as is usual for the particular class

of casing used" (Lines 64-66). Thus, it is evident that the specific rim construction is not critical in the tire assembly of Krum and as such, one of ordinary skill in the art at the time of the invention would have found it obvious to form the respective tire assemblies with a "safety rim" (one piece rim) for the well recognized economical and safety benefits noted above, it being emphasized that rim technology has significantly advanced since the early 1900's at which time the tire assembly of Krum was conceived.

Regarding claim 2, Krum defines an air valve (c3).

With respect to claims 6 and 12, as previously set forth in Paper Number 3, Page 6, one of ordinary skill in the art at the time of the invention would have found it obvious to inflate adjacent balls with different internal pressures as the respective balls would be expected to have somewhat different pressures.

Regarding claim 17, in describing the inflated balls, Krum (Column Lines 102-105) suggests the use of a flexible or resilient material, such as rubber or the like. While none of these references provides an express teaching for the use of polyurethane, one of ordinary skill in the art at the time of the invention would have found such a material selection to have been obvious since polyurethane, along with natural and synthetic rubbers, is extremely well known and extensively in the tire industry to form elastic bodies or components, as previously set forth in Paper Number 3, Paragraph 12. It is noted that Krum suggests that the critical aspect or characteristic of the material used for the inflated ball is flexibility or resiliency, wherein rubber is an exemplary embodiment that satisfies the desired characteristics. Also, while the claim

recites the welding of polyurethane sheets, these limitations are "method limitations" and fail to further define the structure of the claimed invention, there being no evidence of such a method resulting in a materially different article (inflated ball).

5. Claims 3, 4, 8-11, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krum, Mitchell, and Ross as applied in Paragraph 2 and further in view of Richards (US 1,332,953, of record). In describing the plurality of balls, Krum suggests that the balls are inflated. However, in each instance, the references do not describe the specific inflation means and thus, the references necessarily fail to disclose that at least one ball contains a valve assembly. In any event, one of ordinary skill in the art at the time of the invention would have found it obvious to include a valve assembly as the inflation means in at least one ball since this construction represents an extremely well known and extensively used means to control the pressure within a restricted region, such as a ball in tires. For example, Richards is directed to a similar tire construction having a plurality of inflated balls in which each ball contains a valve assembly to inflate the respective balls. As such, one of ordinary skill in the art at the time of the invention would have readily appreciated the inclusion of a valve assembly in the balls of Krum as detailed above.

Furthermore, regarding the use of polyurethane, Krum suggests the use of a flexible or resilient material, such as rubber or the like. While none of these references provides an express teaching for the use of polyurethane, one of ordinary skill in the art at the time of the invention would have found such a material selection to have been obvious since polyurethane, along with natural and synthetic rubbers, is extremely well

known and extensively in the tire industry to form elastic bodies or components, as previously set forth in Paper Number 3, Paragraph 12. It is noted that Krum suggests that the critical aspect or characteristic of the material used for the inflated ball is flexibility or resiliency, wherein rubber is an exemplary embodiment that satisfies the desired characteristics.

Regarding claims 9 and 14, one of ordinary skill in the art at the time of the invention would have found it obvious to inflate adjacent balls with different internal pressures as the respective balls would be expected to have somewhat different pressures.

With specific respect to claim 10, while the claim recites the welding of polyurethane sheets, these limitations are "method limitations" and fail to further define the structure of the claimed invention, there being no evidence of such a method resulting in a materially different article (inflated ball).

6. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krum, Mitchell, Ross, and Richards as applied in Paragraph 3 and further in view of the Admitted Prior Art (Page 8, Lines 9-12)). While the prior art references are silent with respect to the inclusion of a rim lock, such a component represents a standard tire component that presses the tire edge portions against the recesses of the rim, thereby providing a secure attachment between the tire and the rim, as shown for example by the Admitted Prior Art (Page 8, Lines 9-12). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a rim lock in any of the tire assembly described by Krum since it is desired to obtain a good attachment



Art Unit: 1733

between the tire and the rim and a rim lock represents a standard or well known means of obtaining this desired property in a variety of tire constructions. It is noted that applicant has further stated (Paper Number 4, Page 10) that rim locks are well known in the tire industry and has identified multiple catalog pages in which this component is described. Thus, it is clearly evident that a "rim lock" represents a standard/well known tire component and one of ordinary skill in the art at the time of the invention would have readily appreciated the use of such a well known tire component in a plurality of tire assemblies, including that described by Krum.

#### ***Allowable Subject Matter***

7. Claims 15 and 18-21 are allowed. As previously set forth, there was no reference in the prior art search that disclosed, taught, or suggested a tire assembly comprising a tire and a safety rim (conventional one piece rim), wherein a plurality of inflated balls, each having a diameter that spans the space between the rim and the tire casing, are disposed within the tire cavity, such that each ball can support a load (in pounds) equal to or greater than one hundred times the cube of its diameter (in inches) without exceeding its tensile and elastic limit and each ball has a wall thickness less than 3 percent of its diameter. In particular, none of the prior art references of record disclosed the claimed relationships between the ball diameter, wall thickness, and load capabilities.

#### ***Response to Arguments***

8. Applicant's arguments filed May 25, 2004 have been fully considered but they are not fully persuasive.

Regarding the general description of the ball being able to circumferentially shift, applicant's arguments are persuasive and the 112,1<sup>st</sup> Paragraph has been withdrawn.

With respect to the language "at least some of", applicant contends that additional embodiments are conceivable in which not all of the balls are free to circumferentially shift. This language, though, was contained with the remarks section in applicant's response- such an arrangement was not envisioned in light of the original disclosure. As such, it does not appear that applicant had possession of such an arrangement at the time of the invention.

Regarding the negative limitation, applicant contends that adequate description does not require literal support for the claimed invention. In this instance, applicant is not attempting to limit what is disposed within the space between the tire and the rim but rather is attempting to limit the rigidity of any additional component; however, it is not clear that applicant envisioned an embodiment (at the time of the invention) in which multiple elements (balls and additional elements) were disposed within the tire space and the largest rigidity was exhibited by the balls. It is suggested that applicant positively claim that the balls are the only element within the tire space if such an embodiment is desired (Figure 6). It is further noted that the original disclosure does describe embodiments in which a rim lock and an inner tube are disposed within the tire space- in these instances, though, there is no discussion as to the rigidity of the respective components.

As to the art rejections, Peck and Grubb have been withdrawn in view of the language requiring the circumferential movement of the balls. The rejection involving

Krum, however, is maintained in light of the 112,1<sup>st</sup> Paragraph rejections set forth above.

With respect to claims 6 and 9, the 112,1<sup>st</sup> Paragraph rejection has been set forth above.

As to claim 22, applicant contends that the claim has been amended to make it clear that there is nothing more rigid than the balls that also extends radially to span the space between the rim and the tire. However, as noted above, this language constitutes new matter in that the original disclosure fails to describe an embodiment in which additional elements span the space and furthermore, an embodiment in which the additional elements are less rigid than the balls.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin R Fischer whose telephone number is (571) 272-1215. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Justin Fischer

July 23, 2004

  
JEFF H. AFTERGLOW  
PRIMARY EXAMINE  
GROUP 1300